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ABSTRACT

There are many avenues available to computer-assisted instruction (CAI) practitioners and developers in search of access to new ideas, research findings, and emerging technologies that will assist them in developing CAI products. Seven such avenues are described in detail: (1) graduate student interns, who bring unique insights, theory, and current research to corporate organizations; (2) industry publications and trade journals, which present research findings and reports on emerging technologies; (3) industry/trade conferences, which provide a chance to network with peers; (4) direct university education (i.e., graduate level courses) in computer-based training, computer uses in education, artificial intelligence, video production, computer graphics and animation, instructional design, human factors, adult education, cognitive psychology, and programming; (5) professional consultants, who have a broad perspective on CAI techniques, methods, and technologies that other organizations are using; (6) library research; and (7) affiliations with universities. Each of these options is briefly discussed in this paper, and it is concluded that, while some require more effort than others, one cannot go wrong with any of them. (ALF)

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In Search of New Ideas, Research Findings, and Emerging Technologies? Here's Where to Find Them.

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(Paper presented at the 34th ADCIS International Conference, Norfolk, VA, USA, November 8-11, 1992)

Abstract

There are many avenues available to CAI practitioners and developers in search of access to new ideas, research findings and emerging technologies -- that will assist them in their work (developing CAI). Seven such avenues are discussed in detail. These seven avenues are as follows:

- Graduate Students (Interns)
- Industry Publications & Trade Journals
- Industry/Trade Conferences
- Direct University Education (Graduate Level Courses)
- Hiring Professional Consultants
- Research
- Establishing Affiliations with Universities

Paper

It is not unusual as a developer of computer assisted instruction (CAI) to get extremely bogged down with work assignments, projects, meetings and the like. I have spent many hours fully concentrated on something as minute as a subroutine that just won't work right...and before I knew it, not only had lunch come and gone, so had the entire day! I've also found myself thinking about how to get a particular piece of code to work...*on my time off* (good grief)! Anyone who has had a tough

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time seeing past "this project" has consequently felt a little "out of touch" with what's going on in our field as a whole. This article will furnish some solutions to our problem.

The purpose of this article is to provide and discuss seven avenues through which CAI developers can gain access to new ideas, research findings and emerging technologies. These proposed solutions will assist developers in their work performance (developing computer-based interactive instructional products). These seven avenues are as follows:

- Graduate Students (Interns)
- Industry Publications & Trade Journals
- Industry/Trade Conferences
- Direct University Education (Graduate Level Courses)
- Hiring Professional Consultants
- Research
- Establishing Affiliations with Universities

1. **Graduate Students (Interns)**

Graduate Students (interns) can bring unique insights to corporate organizations. They are usually bright, hard working, and willing to learn. Additionally, graduate student's minds are richly soaked with theory and research that CAI developers in the field may be missing, as the developers may have been out of school for many years.

Acquiring interns can be either a formal or informal process. Some organizations, like Arthur Andersen & Co., have internship programs that are very formal and structured, and hire many interns (12-16) three or four times a year. Creating such an arrangement in an organization requires strong "buy-in" and support from both upper-management and human resources, since doing so is a significant undertaking which takes much commitment and effort to initiate.

Additionally, a constant line item budget allocation for the intern's salaries[1] will be required. Full-blown internship programs take time to get established, and while they can greatly provide long term organizational benefits, it is a major undertaking if a developer's primary concerns are his or her personal needs.

With some other organizations, the process for hiring interns is not as structured, as they are used more sporadically. In such places, hiring an intern is more "personal" or one-on-one in nature. For instance, graduate students seeking an internship may approach professional CAI developers or managers in the field personally (e.g., they send a letter of interest), requiring the developer or manager to provide justification for hiring the intern. Or, if a need has already been established, the CAI professional could approach an Instructional Technology department at a local university (such as the University of Georgia) to inform the chairperson that they are looking for an intern. Since only one or two interns are being dealt with, all that is needed is the approval of a few managers, and the approval to hire a "temp" for a few months. This "personal" approach is a quick way to get in touch with what's going on in the field of technology-based instruction, and only requires the developer's own commitment and some extra money.

For more on internships, see the following references:

Couch, R. A., Branch, R. C., & Orey, M. (1989). Corporate internships as part of a graduate program in Instructional Technology. Performance and Instruction. 28,(9), 26-28.

Couch, R. A., Branch, R. C., & Orey, M. (1989). A systems approach to selecting an internship. (ERIC Document Reproductive Service No. ED 338 137)

2. **Industry Publications & Trade Journals**

Industry Publications & Trade Journals (e.g., Journal of Computer-Based Instruction) provide numerous research findings and reports on emerging

[1] Note: Not all internships are paid, but most graduate students will expect to be compensated. The salaries for interns are not as high as for full time staff (about 1/2 to 2/3), which again is what most graduate students are accustomed to.

technologies. Taking the time to read but a few articles, reports, and studies on a regular basis can provide many new ideas. Even though it can take up to year from the date an article was written and submitted, to the date it appears in print, its well worth the time to read the journals and newsletters.

3. **Industry/Trade Conferences**

Industry/Trade Conferences (e.g., ADCIS, AECT, SALT) provide a plethora of resources from which to get new ideas, research findings, etc.. Beyond attending the concurrent sessions (which is paramount), a conference is a place to establish dialogs with peers, scholars, and other professionals in the field of CAI. By attending sessions and networking, one can get a good grasp on what's going on *now*. It cannot be stressed enough how rewarding it is to attend at least one conference a year. There is much to be learned at conferences, both formally (sessions) and informally (socializing). And not only can you learn from others, they can learn from you too!

4. **Direct University Education (Graduate Level Courses)**

Direct University Education (Graduate Level Courses) via a local university will without a doubt get one back into the research. Courses that may be relevant to CAI professionals include: computer-based training, computer uses in education, artificial intelligence, video production, computer graphics and animation, instructional design, human factors, adult education, cognitive psychology, and programming. This avenue allows developers to broaden their knowledge of the field, and make them more valuable to their employer to boot. Attending school part time allows one to work during the day while taking classes at night. Also, it is not necessary to be seeking a degree (e.g., M.A. or Ph.D.) in order to take a few courses. Another option is to take a leave of absence and return to school full time. Those who are lucky work for companies with a tuition reimbursement policy. If not, and cost is an issue, consider taking one or two classes at a time; or, if quitting work is a prerequisite to attending school (full-time), look into applying for a graduate assistantship that offers a tuition waiver and stipend.

5. **Hiring Professional Consultants**

Professional Consultants also can be a rich source of new ideas, new ways of doing things, and emerging technologies. Since consultants move around from organization to organization, they tend to have a broad perspective on specific CAI techniques (such as GUI's), and on methods and technologies that other professionals and organizations are using. Consultants often tend to know first hand what works, and what does not; thereby giving the hirer the edge of avoiding the mistakes of others. Again, as with the interns, hiring a consultant requires "sign-off" from manager(s). Consultants can be costly (much more costly than interns) and are generally desired for specific needs (e.g., a project with big demands). Unless a project requires specific skills that can not be found internally, it will be hard pressed to provide justification for hiring a consultant.

6. **Research**

Research, that is actively going into the library stacks (as opposed to passively subscribing to publications), is a sure fire way to get to what's going on in the field. Doing research is not an arduous task, especially if 'on-line' or CD-ROM platform databases like ERIC are utilized. Research is most fruitful when there is a specific topic information is needed on -- like instructional models, writing objectives, or developing interactive instruction for inner-city youths.

7. **Establishing Affiliations with Universities**

Establishing Affiliations with Universities requires the most amount of work. Such links require initiative and commitment from "up top." These "high-tech connections" between industrial firms and academic institutions require a substantial amount of cooperative effort. The nature of the affiliation can vary; such as inviting college professors to sit on an academic review board, or providing funding to an Instructional Technology (or similar) department/institute in exchange for theories, models, design documents, instructional techniques and actual development work. Affiliations are usually long term, and go beyond simply "farming out" some

development work to some graduate students. For more information on academic/industrial relationships, see the following references:

Johnson, L. (1984). The High-Technology Connection: Academic/Industrial Cooperation for Economic Growth. ASHE-ERIC Higher Education Research Report No. 6.

Milligan, F. (1988). The vital role of faculty in developing successful relationships with business and industry. ERIC Document Reproductive Service No. 293 608

Powers, D., Powers, M., Betz, F., and Aslanian, C. (1988). Higher education in partnership with industry. San Francisco, London: Jossey-Bass Publishers.

Schneiderman, H. A. (1987). Making partnerships work. Across the Board, 24(5), 28-29.

As can be seen, there are many options available to CAI practitioners in search of avenues through which they can gain access to new ideas, research findings and emerging technologies, that will assist them in their work. While some suggestions require more effort than others, one can not go wrong with any of them; diligence will be rewarded. Both you, and your organization, will be much the better off -- so go for it!